"GAMMEXANE" AND MOSQUITO CONTROL

BY

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Field trials with the new insecticide "gammexane" have recently been carried out in Sierra Leone against the adult house-haunting mosquitoes, *A. gambiae*, *A. melas*, and *A. funestus*, with considerable success. Laboratory tests with gammexane have previously shown that it is not only lethal to mosquitoes in smaller concentrations than D.D.T. but is quicker in its action.

Trials were made in small native villages, first using small smoke generators containing the insecticide, and later using residual sprays. Because of the inadequate retention of the smoke by the ordinary native house the smoke generators did not prove very successful in reducing the numbers of mosquitoes. Residual sprays containing gammexane, applied to the internal walls of the houses, reduced the numbers of mosquitoes in the houses very significantly for periods varying from one to six months, depending on the rate of application of the insecticide, the thoroughness of treatment of the houses, and the proportion of any one area treated. The optimum concentration appeared to be 10 mg. of gammexane per sq. ft. (930 sq. cm.) of wall surface [4 pints (2.3 litres) of a 0.5% solution of gammexane to 1,000 sq. ft. (93 sq. m.)], and the effect produced compared in persistence very favourably with that claimed for D.D.T. at 100–200 mg. per sq. ft.

Residual sprays made up of gammexane dissolved in kerosene, and water-miscible oil and water-dispersible powder mixtures containing the insecticide, all produced good results, although the latter mixture was slightly less persistent than the other two.

Throughout these trials it was repeatedly observed that the treatment of most of the houses in a village with sprays containing gammexane not only reduced the mosquitoes in the treated houses but also in the untreated ones. Similarly, the treatment of a group of adjacent villages, where a few of the villages were left untreated as "controls," appeared to reduce the density of the mosquito population in the untreated as well as in the treated ones. This would be expected if the result of treatment was to kill off large numbers of the mosquitoes and so reduce the intensity of breeding throughout the area.

It has been suggested recently that the use of residual insecticides in houses causes the normally house-haunting species of mosquitoes to change their habits and to enter houses only to feed, leaving immediately without coming in contact with the insecticide, or resting for such a short time on the treated surface that no lethal effect is produced. As a result of this change in habits no marked decrease in the malaria rate in the local population would be produced by the use of these residual insecticides. Such an argument has been put forward in the case of D.D.T. Laboratory evidence on the quicker action of gammexane and the evidence accumulated in these trials in West Africa would seem to indicate that this substance does actually kill off large numbers of the mosquitoes, and a consequent reduction in the malaria rate would be expected from its use.

Blood films were taken before and 12 to 22 weeks after treatment of several of the villages involved in these trials, but no significant reduction in the malaria rate was found. It is considered, however, that this period is too short for any great change to be produced. It is hoped that further

trials extending over a longer period will be carried out in the near future.

A detailed account of the above trials and their results is to be published shortly.

Medical Memoranda

A Case of Congenital Fibrolipoma of Cornea

The following report of a rare condition is interesting enough to merit publication.

CASE REPORT

A male baby aged 3½ months was brought to the out-patient department of the Wolverhampton and Midland Eye Infirmary as the mother thought "skin was growing over the left eye since birth." There was no history of inflammation or injury. The appearance of the child is shown in the accompanying photograph. The right eye showed normal development. The left eyeball was replaced by a mobile pedunculated rounded swelling about 1½ in. (3.2 cm.) in diameter. The eyelids and the eyelashes were of normal development and completely covered the eyeball. The cornea and conjunctiva were covered over with a membrane which resembled the skin. A tentative diagnosis of corneal dermoid was made, and the child was kept under observation. Within three months the swelling was getting bigger, so it was decided to operate. Under general anaesthesia the whole mass was removed. The child made an uninterrupted recovery.

The specimen was sent to the Nuffield Laboratory at Oxford, and Miss Mann kindly furnished the following report:

"*Macroscopically*.—The specimen measures 2.5 cm. antero-posteriorly and 1.5 cm. equatorially. The globe appears to be constricted in the middle, where the conjunctiva was attached. The globe is divided antero-posteriorly, the anterior half consisting of a dense white mass replacing the cornea; behind this is a small vitreous chamber with retina and choroid in position and an imperfectly formed anterior chamber, but no trace of lens. The condition is one of congenital fibrolipoma of cornea.

"*Microscopically*.—The cornea is replaced by a mass of fibrofatty tissue, the surface showing squamous epithelium with skin structures (hair follicles and sweat glands). Beneath this is a layer of fibrous tissue, and beneath this again fat and blood vessels. There is a small malformed anterior chamber, lined with Descemet's membrane and endothelium, but no normal iris or lens, though some peculiar colloidal material in the anterior chamber is probably the remains of a malformed lens. Ciliary processes, retina, and choroid are present. There are many rosette formations (common in malformed eyes). The optic nerve is present, and appears almost normal.

"*Diagnosis*.—Congenital fibrolipoma of cornea."

My thanks are due to Mr. Wyn-Green, assistant surgeon at Wolverhampton Eye Infirmary, for permission to publish this case.

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The National Institute for the Blind point out that the problem of blindness in British tropical Africa is a serious one. In Uganda, for example, the incidence was found by a joint mission of the Colonial Office and the N.I.B. to be 4,187 per 100,000 population (the comparable figure in the U.K. is 191). One of the chief causes of blindness is ocular onchocerciasis. Major H. Ridley, who investigated the disease on the Gold Coast, is quoted as saying that it is "not inconceivable" that the disease might spread to temperate lands.